Appendix A:

ABSTRACT OF THE DISCLOSURE

In a method of controlling transmitting and receiving buffers of a network controller and a network controller operating under such a method, at least one request for access to a system bus from the transmitting buffer and the receiving buffer is received, and the occupancy level of data in the receiving buffer and the vacancy level of data in the transmitting buffer are determined. Access to the system bus is granted based on the determination result. Buffers in the transmitting and receiving paths are treated as a single virtual transmitting buffer and a single virtual receiving buffer, respectively. Bus priority is determined by the data occupancy level in each virtual buffer and any change in the occupancy level. Therefore, it is possible to prevent or reduce underflow of the transmitting buffer and overflow of the receiving buffer, thereby impartially arbitrating which of the buffers can access the memory.